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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/526,518	03/03/2005	Seiji Matsumoto	01044/20013	9245

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EXAMINER	
EMPIE, NATHAN H	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/526,518	MATSUMOTO, SEIJI	
	Examiner	Art Unit	
	Nathan H. Empie	1709	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 May 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) *15-17* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1-14 and 18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 March 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *5/15/07,3/3/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Claims 15-17 withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 5/31/2007.

Specification

2. The disclosure is objected to because of the following informalities:

3. In paragraphs [0012,0065,0115], the ISO # provided to describe durometer hardness (7627-2) is believed to be mis-typed, and should actually be ISO 7267-2.

4. In paragraph [0055] the representation of the oscillation frequency as "(4.5 x 60) – 3" is believed to be mistyped, and should actually be (4.5 x 60) – 30.

Appropriate correction is required.

Claim Objections

5. Claim 7 is objected to because of the following informalities: The ISO # provided in claim 7 to describe durometer hardness (7627-2) is believed to be mis-typed, and should actually be ISO 7267-2. Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-4 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Fukushima et al. (US 2002/0055017 A1; hereafter '017).

8. '017 teaches a method for manufacturing a glass substrate for an information recording medium ([0007] – magnetic recording medium, which includes non-metallic substrates, and [0082] – a non-metallic substrate may be a glass substrate), ([0085-0087] and example 1 [0102-0104]) the method comprising:

9. forming a texture on a main surface of a disc-shaped glass plate (mechanical texturing, [0104]) by supplying an abrasive agent (polishing slurry, [0104]) containing an abrasive grain (slurry contains diamond polishing grains, [0104]) to the main surface and slidably contacting the main surface with an abrasive member (polishing tape) (a polishing tape is pressed onto the surface of the substrate to thereby bring the tape into contact with the surface [0085]);

10. and oscillating either one of the abrasive member and the glass plate in a radial direction of the glass plate with respect to the other one of the abrasive member (polishing tape is vibrated (oscillated) in a radial direction of the substrate, [0087]) and the glass plate while rotating the glass plate (the substrate is rotated at 200-1000 rpm, [0085]) (example 1, [0104]).

11. '017 does not explicitly state that the abrasive grain repeatedly draws a closed track that intersects in at least three locations on the main surface of the glass plate, but since '017 teaches a method of texturing a disk surface where the oscillation frequency (F) (in min), and the rotation speed (R) are non-synchronized (F = 10 x 60 = 600. R = 700 RPM; R = F+100) ([0104]); where the ratio of the difference between the R and F to the frequency (in Hertz) is: 100/10 = 10. It would inherently perform the closed track with at least three intersections since these values appear significantly similar to the situation described by Fig 4B. of applicants disclosure (R=F+30, and 30/4.5 = 6.67) where such a closed pattern is achieved.

12. Claim 2: '017 teaches the manufacturing method according to claim 1 (described above), wherein a frequency F in Hertz (frequency of vibration (600 / min, or 10 / sec)) of the oscillation and a rotation speed R (rotary speed of substrate is 700 RPM) in revolutions per minute of the glass plate are determined

so that the rotation speed R is outside a range of (F x 60) +-5 (F = 10 x 60 = 600. R = 700 RPM; R = F + 100; [0104]).

13. Claim 3: '017 does not explicitly state wherein the closed track includes at least five intersections, but since '017 teaches a method of texturing a disk surface where the oscillation frequency (F) (in min), and the rotation speed (R) are non-synchronized (F = 10 x 60 = 600. R = 700 RPM; R = F+100) ([0104]); where the ratio of the difference between the R and F to the frequency (in Hertz) is: 100/10 = 10. It would inherently perform the closed track with at least five intersections since these values appear significantly similar to the situation described by Fig 4B. of applicants disclosure (R=F+30, and 30/4.5 = 6.67) where significantly more than five intersections exist.

14. Claim 4: '017 teaches the manufacturing method according to claim 1 (described above), wherein the frequency of oscillation is greater than 0 Hz but 20 Hz or less (frequency is 600 / min, or 10 Hz, [0104]).

15. Claim 18: '017 teaches the manufacturing method according to claim 1 (described above), but '134 does not explicitly state wherein said closed track forms intersections therein and the intersections are equally distributed on the main surface of the glass plate, but since '017 teaches a method of texturing a disk surface where the oscillation frequency (F) (in min), and the rotation speed (R) are non-synchronized (F = 10 x 60 = 600. R = 700 RPM; R = F+100) ([0104]); where the ratio of the difference between the R and F to the frequency (in Hertz) is: 100/10 = 10. It would inherently perform the closed track with intersections which appear significantly similar to a situation described by Fig 4A. of applicants disclosure (R=F+30, and 30/4.5 = 6.67) where such an equally distributed closed pattern is achieved.

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

17. Claims 1, 2, 4, 6, 7, 10-12, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horie et al. (US2002/0016134 A1; hereafter '134) in view of '017.

18. '134 teaches a method for manufacturing a substrate for an information recording medium (texturing experiment in [0022] on a disk substrate, and example substrate being a magnetic hard disk [0024], Fig 6), the method comprising:

19. forming a texture on a main surface of a disc-shaped glass plate (texturing experiment) by supplying an abrasive agent (63) (liquid slurry, Fig 6, [0021]) containing an abrasive grain (liquid slurry is a suspension of diamond particles, [0022]) to the main surface (D) and slidably contacting the main surface with an abrasive member (K) (polishing tape) (Fig. 6, [0021-0022]);

20. and oscillating either one of the abrasive member and the plate in a radial direction (rubber roller oscillates (vibrates) polishing tape in a radial direction to the disk substrate) of the plate with respect to the other one of the abrasive member and the plate while rotating the plate (rotating the disk substrate).

21. '134 does not explicitly state that the abrasive grain repeatedly draws a closed track that intersects in at least three locations on the main surface of the plate, but since '134 teaches a method of texturing a disk surface where the oscillation frequency (F) (in min), and the rotation speed (R) are non-synchronized (F = 2.5 x 60 = 150. R = 95 RPM; R = F-55) ([0022]); where the ratio of the difference between the R and F to the frequency (in Hertz) is: 55/2.5 = 22. It would inherently perform the closed track with three

intersection since these values appear significantly similar to a situation described by Fig 4A. of applicants disclosure (R=F+60, and 60/3 = 20) where such a closed pattern is achieved.

22. '134 does not explicitly teach that the substrate is glass. '017 teaches a method for manufacturing a substrate for information recording media where the substrate is glass ([0005]). The motivation to select a glass substrate as the magnetic recording media taught in '134 is that '017 teaches that glass substrates are preferred for magnetic recording media because they "exhibit rigidity, excellent impact resistance, and evenness... thus are applicable to an increase in recording density" ([0005]). Therefore it would have been obvious to have selected a glass material as taught by '017 as the substrate for the method of texturing a recording media as taught by '134 as a glass substrate would allow for an increase in recording density.

23. Claim 2: '134 teaches a frequency F in Hertz (frequency of vibration (150 / min, or 2.5 / sec)) of the oscillation and a rotation speed R (rotary speed of substrate is 95 RPM) in revolutions per minute of the glass plate are determined so that the rotation speed R is outside a range of (F x 60) +-5 (F = 2.5 x 60 = 150. R = 95 RPM; R = F-55; [0022]).

24. Claim 4: '134 teaches the frequency of oscillation is greater than 0 Hz but 20 Hz or less (frequency is 150 / min, or 2.5 Hz, [0022]).

25. Claim 6: '134 teaches the oscillation has a stroke of 0.5 to 2 mm (amplitude of 1 mm, [0022]).

26. Claim 7: '134 teaches the abrasive member is a roller made of an elastic material having a duro hardness, as defined by ISO 7267-2, of 40 to 90 (pressing the polishing tape through a rubber roller (61) with hardness 40; [0021-0022]).

27. Claim 10: '134 teaches a method for manufacturing a substrate for an information recording medium (texturing experiment in [0022] on a disk substrate, and example substrate being a magnetic hard disk [0024], Fig 6), the method by comprising the steps of: preparing a disc-shaped plate having a main surface and a central circular hole (magnetic hard disk pictured in Fig 6 to possess a central circular hole);

and forming on the main surface a texture including a plurality of grooves (producing a textured disk substrate) [0022],

28. '134 does not explicitly state each groove extending along a closed curve that intersects in at least three locations around the central circular hole, but since '134 teaches a method of texturing a disk surface where the oscillation frequency (F) (in min), and the rotation speed (R) are non-synchronized (F = 2.5 x 60 = 150. R = 95 RPM; R = F-55) ([0022]); where the ratio of the difference between the R and F to the frequency (in Hertz) is: 55/2.5 = 22. It would inherently perform the closed track with three intersection since these values appear significantly similar to a situation described by Fig 4A. of applicants disclosure (R=F+60, and 60/3 = 20) where such a closed pattern is achieved.

29. '134 does not explicitly teach that the substrate is glass. '017 teaches a method for manufacturing a substrate for information recording media where the substrate is glass ([0005]). The motivation to select a glass substrate as the magnetic recording media taught in '134 is that '017 teaches that glass substrates are preferred for magnetic recording media because they "exhibit rigidity, excellent impact resistance, and evenness... thus are applicable to an increase in recording density" ([0005]). Therefore it would have been obvious to have selected a glass material as taught by '017 as the substrate for the method of texturing a recording media as taught by '134 as a glass substrate would allow for an increase in recording density.

30. Claim 11: '134 teaches the step for forming a texture includes: supplying an abrasive agent (63) containing an abrasive grain (diamond particles) to the main surface of the glass plate (D) (Fig 6, [0021-0022]);

31. pressing an abrasive member (slurried polishing tape (K)) against the main surface of the glass plate (D) (Fig 6, [0021-0022]);

32. cyclically oscillating either one of the glass plate or the abrasive member in the radial direction of the glass plate (Fig 6, roller causes tape to vibrate (oscillate) in a radial direction of the disk substrate) [0022]);

33. and rotating the glass plate at a constant speed (disk substrate rotated at a rotary speed of 95 RPM, [0022]).

34. Claim 12: '134 teaches the step for forming a texture includes determining the rotation speed (95 RPM), frequency of oscillation (150 vibrations per minutes), and stroke of oscillation (1mm) of the glass plate ([0022]).

35. Claim 18: '134 does not explicitly state wherein said closed track forms intersections therein and the intersections are equally distributed on the main surface of the glass plate, but since '134 teaches a method of texturing a disk surface where the oscillation frequency (F) (in min), and the rotation speed (R) are non-synchronized (F = 2.5 x 60 = 150. R = 95 RPM; R = F-55) ([0022]); where the ratio of the difference between the R and F to the frequency (in Hertz) is: 55/2.5 = 22. It would inherently perform the closed track with intersections which appear significantly similar to a situation described by Fig 4A. of applicants disclosure (R=F+60, and 60/3 = 20) where such an equally distributed closed pattern is achieved.

36. Claim 5 is rejected under 35 U.S.C. 102(b) as being anticipated by Fukushima et al. (US 2002/0055017 A1; hereafter '017).

37. '017 teaches the manufacturing method according to any one of claim 1 (described above), wherein the rotation speed is 200-1,000 revolutions per minute, but '017 does not teach the rotation speed is 240 to 540 revolutions per minute. It would have been obvious to one of ordinary skill in the art at the time of invention to have selected a range of 240 – 540 rpm, since it has been held that in cases where the

claimed ranges "overlap or lie inside ranges disclosed by the prior art" a *prima facie* case of obviousness exists *In re Wertheim*, 541 F.2d 257,191 USPQ 90 (CCPA 1976).

38. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over '017 in view of Shige et al. (US 5,899,794; hereafter '794) in further view of Shiro et al. (US 6,362,107; hereafter '107).

39. '017 teaches the manufacturing method according to claim 1 (described above), but '017 does not teach further comprising: scrubbing the main surface of the glass plate with a scrubbing material after texturing. '794 teaches a method of texturing similar to '017 but with the addition of a second-stage texturing process of scrubbing the main surface of the substrate (col 6 lines 11-23). The motivation to combine a second stage texturing process to the initial texturing process is that '794 teaches that a second stage texturing process can selectively remove fins, burrs, or the like that were formed during the first texturing process (col 6 lines 17-23). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to have incorporated an second-texturing step taught by '794 in the initial texturing process taught by '017 as it would enable the removal of fins, burrs, or the like from the initial texturing process.

40. The modified '017 teaches a manufacturing method according to claim 1 and incorporating a second-stage texturing method to remove burrs, but it does not teach the scrubbing material in which a 100% modulus, as defined by JIS K7113, is 2.9 to 39.2 MPa. '107 teaches a scrubbing material in which a 100% modulus, as defined by JIS K7113, is 2.9 to 39.2 MPa (a polishing pad with the top cushioning layer possesses a the preferred tensile modulus of 0.5-18 MPa, and more preferred tensile modulus of 5 to 15 MPa, col 3 lines 15-25). The motivation to select the material taught by '107 as the polishing pad material for the second-stage texturing process described by '017 in view of '794, is because if the tensile modulus is less than 0.1 MPa, or greater than 20 MPa, the uniformity of the planarity of the surface face as a whole is impaired ('107, col 3 line 60 – col 4 line 10). Therefore it would have been obvious to one

of ordinary skill in the art at the time of invention to have selected the a material as described by '107 into the secondary texturing process as taught by '017 in view of '794 as the values of tensile modulus outside of the taught range would lead to non-uniformity in the polished surface.

41.

42. Claim 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over '017 in view of Strecker (US 5645471; hereafter '471).

43. '017 teaches the manufacturing method according to claim 4 (described above), wherein the frequency of oscillation can be carried out at a rate of 1-20 Hz [0087] for information recording media. '017 does not teach the common size range for manufactured disks. '471 teaches a method of texturing a substrate similar to that of '017 for applications including rigid memory disks (col 1 lines 15-50), where the rigid disks have diameters most typically between 48 and 130 mm (col 5 lines 34-50). The motivation to incorporate the substrate size range taught by '471 into the process of texturing disks as taught by '017 is that '471 teaches the size range of commonly produced rigid disks for memory media. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to have incorporated the range of substrate sizes taught by '471 into the process taught by '017 as it teaches a commonly known suitable range of memory media diameters.

44. '017 in view of '471 do not teach that frequency of oscillation is greater than 0 Hz but 4 Hz or less when an outer diameter of the glass plate is 48 mm or less, and the frequency of oscillation is greater than 4 Hz but 20 Hz or less when the outer diameter is greater than 48 mm. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected a frequency of oscillation is greater than 0 Hz but 4 Hz or less when an outer diameter of the glass plate is 48 mm or less, and the frequency of oscillation is greater than 4 Hz but 20 Hz or less when the outer diameter is greater than 48 mm, since it has been held that where the general conditions of a claim are disclosed in the prior

art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 220 F.2d 454 105 ISPQ 233 (CCPA 1955).

45.

46. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over '017 in view of Saito et al. (US 2002/0127432 A1; hereafter '432).

47. '017 teaches a method for manufacturing a glass substrate for an information recording medium (([0007] – magnetic recording medium, which includes non-metallic substrates, and [0082] – a non-metallic substrate may be a glass substrate), ([0085-0087] and example 1 [0102-0104])), the method by comprising the steps of: preparing a disc-shaped glass plate having a main surface (magnetic recording medium, a glass ceramic substrate [0102-0103]);

48. and forming on the main surface a texture including a plurality of grooves (texture grooves, [0084]),

49. '017 does not teach the magnetic recording medium possesses a central circular hole; it is well known in the art at the time of invention that a magnetic recording medium possesses a central circular hole, as taught in '432. '432 teaches a similar process, to that taught in '017, for texturing a glass substrate for a magnetic recording medium which possesses a central circular hole (Fig 1) (Abstract). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate a hole into the center of the magnetic recording media as it is a commonly known feature for such a media to possess.

50. '017 does not explicitly state each groove extending along a closed curve that intersects in at least three locations around the central circular hole, but since '017 teaches a method of texturing a disk surface where the oscillation frequency (F) (in min), and the rotation speed (R) are non-synchronized (F = 10 x 60 = 600. R = 700 RPM; R = F+100) ([0104]); and where the ratio of the difference between the R and F to the frequency (in Hertz) is: 100/10 = 10. It would inherently perform the closed track with at

least three intersections since these values appear significantly similar to the situation described by Fig 4B of applicants disclosure (R=F+30, and 30/4.5 = 6.67) where such a closed pattern is achieved.

51. Claim 11: '017 teaches the step for forming a texture includes: supplying an abrasive agent (polishing slurry) containing an abrasive grain (diamond polishing grains) to the main surface of the glass plate ([0085, 0104]);

52. pressing an abrasive member (slurried polishing tape) against the main surface of the glass plate ([0085]);

53. cyclically oscillating either one of the glass plate or the abrasive member in the radial direction of the glass plate (polishing tape is vibrated (oscillated) in a radial direction of the disk substrate) [0087, 0104]);

54. and rotating the glass plate at a constant speed (disk substrate rotated at a rotary speed of 700 RPM, [00104]).

55.

56. Claim 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over '017 and '432 as applied to claim 11 above, and further in view of '134.

57. '017 teaches the step for forming a texture includes determining the rotation speed (200-1000), frequency of oscillation (60-1200 times per minutes) the glass plate ([0085, 0087]). But '017 is silent as to the stroke of oscillation of the glass plate. '134 teaches a manufacturing method of texturing a recording media disk similar to that of '017, where the stroke (amplitude) of an oscillating roller is 1 mm ([0022]). The motivation to combine the stroke of the roller taught by '134 into the process taught by '017 is that '134 teaches an appropriate stroke of an oscillating roller in a disk texturing method where '017 was silent. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to have incorporated the amplitude of the oscillating roller taught by '134 into the texturing

process taught by '017 since '017 was silent to the magnitude of the stroke, and '134 taught a suitable value for a similar method.

58. Claim 13: '017 and '432 further in view of '134 teaches the manufacturing method according to claim 12, wherein the stroke of oscillation is 0.5 to 2 mm (1mm) ('134, ([0022])), and the frequency F in Hertz of oscillation ('017, 600 times / min or 10 Hz, [0104]) and the rotation speed R in revolutions per minute of the glass plate ('017, 700 RPM, [0104]) are determined so that the rotation speed R is outside the range of (F x 60)+-5 (F = 10 x 60 = 600. R = 700 RPM; R = F+100) ('017, [0104]).

59.

60. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over '017, '432, and '134 as applied to claim 13, and further in view of '471.

61. '017 teaches the frequency of oscillation is preferably between 1-20 Hz ([0087]. But the modified '017 does not teach the common size range for manufactured disks. '471 teaches a method of texturing a substrate similar to that of '017 for applications including rigid memory disks (col 1 lines 15-50), where the rigid disks have diameters most typically between 48 and 130 mm (col 5 lines 34-50). The motivation to incorporate the substrate size range taught by '471 into the process of texturing disks as taught by '017 is that '471 teaches the size range of commonly produced rigid disks for memory media. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to have incorporated the range of substrate sizes taught by '471 into the process taught by '017 as it teaches a commonly known suitable range of memory media diameters.

62. The modified '017 in view of '471 do not teach that frequency of oscillation is changed in accordance with an outer diameter dimension of the glass plate. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have changed the frequency of oscillation in accordance with an outer diameter dimension of the glass plate, since it has been held that where the

general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 220 F.2d 454 105 ISPQ 233 (CCPA 1955).

Conclusion

63. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure as they relate to disk texturing methods: US 4,762,534; US 5,885,143; US 5,750,230, US 5,733,178 and US 5,478,622.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan H. Empie whose telephone number is (571) 270-1886. The examiner can normally be reached on M-F, 7:00- 4:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cleveland can be reached on (571) 272-1418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NHE

MICHAEL B. CLEVELAND
SUPERVISORY PATENT EXAMINER